

Remarks:

Reconsideration of the application is requested.

Claims 1-7, 9-22, and 67-68 remain in the application. Claim 1 has been amended.

In item 6 of the Office action, the Examiner rejected claims 1-3, 5, 7, 9-12, and 67-68 as being fully anticipated by Tredway et al. (U.S. 5,552,213) under 35 U.S.C. § 102(b). Before discussing the prior art in detail, a brief review of the invention as claimed is provided.

To begin, the differences between a glass (cited by the Examiner) and a composite material (the invention of the instant application) are to be emphasized. A glass ceramic is a devitrified or crystallized form of glass. A glass is a ceramic material having a uniformly dispersed mixture of silica (i.e. silicon dioxide or sand) (75%), soda ash (20%), and lime (5%) often combined with metallic oxides such as calcium, lead, lithium, and cerium. In contrast, the composite material includes a ceramic matrix made from phases of silicon, carbon, and silicon carbide.

Claim 1 calls for, *inter alia*, a composite material featuring the following:

a ceramic matrix consisting of phases of silicon, carbon, and silicon carbide; and

fiber bundles having two different fractions including a reinforcing fiber bundle fraction and a matrix fiber bundle fraction having lengths with different averages, each of said fiber bundles having a weight, said weights being proportional to said fiber bundle lengths, said weights being plotted on a total fiber bundle distribution, and said fractions of fiber bundles being separated by a minimum in said total fiber bundle distribution.

Tredway et al. disclose fiber bundles that are carbon (col. 3, line 21) or graphite (col. 6, line 34). In addition, Tredway et al. disclose silicon carbide as being present; see col. 3, lines 21-23. However, the silicon carbide and carbon are in the forms of fibers: "For example, the reinforcing fibers may be carbon, carbide, such as silicon carbide." (col. 3, line 21 et seq.) There is no mention that the matrix includes these compounds--in Tredway et al. only the fibers do. A matrix and a fiber are two mutually exclusive constituents of a composite.

Claim 1 of the instant application is not anticipated by Tredway et al. for the following reason. The invention as described in claim 1 includes, "A ceramic matrix consisting of phases of silicon, carbon, and silicon carbide." This feature as discussed above, is not described by Tredway et al. Therefore, claim 1 is novel when compared to Tredway et al.

Moreover, because all of the dependent claims are ultimately dependent on claim 1, they are believed to be patentable as well.

In item 8 of the Office action, the Examiner rejected claims 4, 6, and 13-22 as being unpatentable over Tredway et al. (U.S. 5,552,213) in view of Beier et al. (U.S. 6,316,086). Claims 4, 6, and 13-22 ultimately depend on claim 1. As discussed above, Tredway et al. do not show every feature of claim 1. Furthermore, neither Tredway et al. nor Beier et al. suggest, "A ceramic matrix consisting of phases of silicon, carbon, and silicon carbide." Therefore, claims 4, 6, and 13-22 are not obvious over Tredway et al. and Beier et al.

In view of the foregoing, reconsideration and allowance of claims 1-7, 9-22, and 67--68 are solicited. In the event the Examiner should still find any of the claims to be unpatentable, please telephone counsel so that patentable language can be substituted.

If an extension of time for this paper is required, petition for extension is herewith made.

Please charge any other fees that might be due with respect to Sections 1.16 and 1.17 to the Deposit Account of Lerner and Greenberg, P.A., No. 12-1099.

Respectfully submitted,

  
\_\_\_\_\_  
For Applicants

LOREN DONALD PEARSON  
REG. NO. 42,987

LDP:cgm

LOREN DONALD PEARSON  
REG. NO. 42,987

May 6, 2003

Lerner and Greenberg, P.A.  
Post Office Box 2480  
Hollywood, FL 33022-2480  
Tel: (954) 925-1100  
Fax: (954) 925-1101